



Audit and Enforcement Update January 1999

Audit Findings for January:

The Department completed twelve (12) audits in January 1999. Four (4) of those audits did not require further fieldwork. Eight (8) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in January include:

1. Following an audit of a Tier II Classification, the Department issued a Notice of Noncompliance (NON) and established an Interim Deadline for submittal of a revised Tier Classification. The site is an industrial property comprised of five buildings formerly used to manufacture rubber and poly-plastic products for roofing fabrics. Sources of release include a leaking underground storage tank (UST) containing toluene, as well as, USTs containing methyl ethyl ketone and naphtha rubber solvent. In addition, release reports indicate historic spills and overfills of naphtha solvent, toluene, trichloroethylene, and/or perchloroethylene. The site abuts the Charles River to the southwest. Groundwater impacts from toluene, 1,2-dichloroethylene, 1,1-dichloroethylene; ethylene, trichloroethylene, and vinyl chloride are present at the site. The Tier Classification submitted for the site noted a total site score of 330 points in support of a Tier II Classification. The Department has determined that the submitted Tier Classification failed to adequately classify the site. Identified violations of the MCP include: a) failure to score an air exposure pathway, b) failure to score multiple sources of contamination, and c) failure to score for the presence of Wetlands, Vernal Pools, or Outstanding Resource Waters. The corrected total score as calculated by the Department would be 390 points, which would qualify the site for a Tier I classification. (Watertown, 3-13377, NON-NE-99-3P001, January 6, 1999)
2. Following an audit of a Class A-3 Response Action Outcome (RAO), the Department issued a NON, which identified violations

and deficiencies of the MCP and requested retraction of the RAO, and Termination of the Activity & Use Limitation (AUL). The site is currently occupied by a gasoline sales and service operation. The site was formerly used for bulk petroleum storage and distribution. Sources of release at the site include bulk fuel oil and gasoline storage removed from the site in 1986 (RTN 3-3058); petroleum associated with a 3,000-gallon gasoline UST removed in 1994 (RTN 3-10891) and elevated levels (400,000 ug/) of Methyl tertiary-butyl ether (MTBE) measured in groundwater (RTN 3-14077). Remedial response actions conducted at the site included soil excavation and removal along with groundwater pumping and removal. In September 1996, the Department received a RAO and AUL supported by a Method 3 risk characterization. The Department determined that The documentation provided did not support a determination that the site had achieved a level of No Significant Risk, and the response actions conducted did not meet the general provisions nor the performance standards for a Class A-3 RAO. Identified violations of the MCP include: a) failure to eliminate or control each source of release, and b) failure to fully delineate the extent of soil and groundwater contamination. Identified deficiencies of the MCP include: a) failure to consider all available site data points in the risk characterization, b) failure to include all identified contaminants of concern (COC) in the risk characterization, and c) failure to correctly calculate groundwater exposure point concentrations (EPCs) (average groundwater concentrations were used in the submitted risk characterization). (Newton, 3-3058, 3-10891 & 3-14077, NON-NE-99-3A001, January 12, 1999)

3. Following a re-audit of a Tier II Site, the Department issued a Notice of Noncompliance (NON) and required the completion and submission of an Audit Follow-up Plan. The site is currently used as an automotive repair facility. The site was formerly used for retail gasoline sales and service. Sources of release include gasoline and waste oil USTs. In 1996, the site was classified as Tier II. Following a 1997 audit of the site, the Department conditionally approved an Immediate Response Action (IRA) Plan to address separate-phase product. Since October 1997, the Department has received neither an IRA status and/or completion report(s) nor the required Phased Response Action reports. Identified violations of the MCP include: a) failure to submit an IRA status report(s), and b) failure to submit a Phase II Report and if applicable a Phase III Remedial Action Plan within two years of the effective date of Tier Classification. (Abington, 4-01016, NON-SE-99-3A006, January 28, 1999)

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Updated: March 1, 1999



Audit and Enforcement Update February 1999

Audit Findings for February:

The Department completed eight (8) audits in February 1999. One (1) of those audits did not require further fieldwork. Seven (7) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in February include:

1. Following an audit of a Tier Classification and Release Abatement Measure (RAM) at a vacant industrial property currently under development, the Department issued a Notice of Noncompliance (NON) for violations of MCP requirements. Release conditions identified at the site include both total petroleum hydrocarbons (TPH) and volatile organic compounds detected in groundwater and polychlorinated biphenyl's (PCBs) in surficial soils (RTN 2-0721). In addition, lead, nickel, and polynuclear aromatic hydrocarbons (PAHs) were identified at the site (RTN 2-12024). During an inspection of the site in 1998, Department personnel observed water being pumped from an excavation on-site to a local storm drain, which discharges to the nearby (1,200 feet) Nashua River. The water in the excavation exhibited both visual and olfactory evidence of petroleum hydrocarbon contamination. The pumping was requested to stop immediately. Wastewater was removed from the storm drain prior to discharge off-site. Identified violations of MCP requirements include: a) failure to properly discharge remedial wastewater to surface water, and b) failure to submit a Phase II Comprehensive Site Assessment (PHII) and if applicable a Phase III Remedial Action Plan (RAP) within two years of the effective date of Tier Classification. The Department required submission of a schedule for completion of a PHII and Phase III Remedial Action Plan. (Fitchburg, 2-0721 & 2-12024, NON-CE-99-3021, February 8, 1999).
2. Following an audit of an Immediate Response Action (IRA) and Response Action Outcome (RAO), the Department issued a NON

which identified several violations and deficiencies of the MCP and requested retraction of the RAO Statement and submittal of an Audit Follow-up Plan. A multi-family commercial/residential building occupies the site. An estimated 120 gallons of fuel oil were released to the subsurface and interior fieldstone basement from a leaking 1,000-gallon underground storage tank (UST). Approved IRA activities included removal of the oil from the basement floor, removal of the UST, and removal of oil-contaminated soil, and a proposal for groundwater monitoring if complete excavation of impacted soil was infeasible. A subsequent IRA Status report/IRA Plan Modification noted that soil removal was not conducted. Modification of the IRA Plan proposed bioremediation for the release and additional soil characterization in the basement of the building. One monitoring well was installed in the former UST area. On December 23, 1997, the Department received an IRA Completion/RAO report for a Class A-2 RAO supported by a Method 1 risk characterization. Identified violations of MCP requirements include: a) failure to demonstrate a level of No Significant Risk (NRS) (both GW-2 and GW-3 groundwater Method 1 standards for total petroleum hydrocarbons (TPH) were exceeded - the Upper Concentration Limits (UCLs) were used for Method 1 comparison in the report submitted to the Department to support a level of NSR), b) failure to include Exposure Point Concentrations (EPCs) for soil and groundwater, c) failure to submit either a Tier Classification or RAO within one year of release notification, d) significant modifications were made to IRA plans without Department approval, e) failure to submit up to four (4) IRA status reports, f) failure to identify the boundaries of the disposal site for which the RAO applies. Identified deficiencies of MCP requirements included: a) failure to define the horizontal and vertical extent of contamination as well as background conditions, b) failure to properly characterize the risk of harm to health, safety, public welfare and the environment, c) failure to employ Response Action Performance Standards (RAPS). (Belchertown, 1-11194, NON-WE-99-3001, February 10, 1999).

3. Following an audit of a Tier Classification submittal and Phase II Comprehensive Site Assessment (PHII) at a gasoline sales and service facility, the Department issued a NON for violations and deficiencies of the MCP and requested submittal of an Audit Follow-up Plan. Phase I Investigations at the site included the installation of 3 soil borings/monitoring wells which documented the presence of gasoline impacts to both soil and groundwater. No additional soil borings/monitoring wells were installed as part of the Phase II investigations. A Method 1 risk characterization included in the Phase II report noted that both benzene, and methyl tert-butyl ether (MTBE) impacts to groundwater exceed applicable standards. Identified violations of MCP requirements included: a)

failure to ensure that analytical data is scientifically valid and defensible (Groundwater samples collected as part of the Phase I investigation were not stored properly and were subsequently received by the laboratory frozen. In addition, air was observed in the VOC sample containers.), b) failure to complete a PHII which meets the performance standard to adequately detail the source, nature, and extent of contamination, hydrogeological characteristics or environmental fate and transport of contamination c) failure to complete minimum public involvement requirements, d) failure to submit a Phase III Remedial Action Plan (RAP) within two years of the effective date of Tier Classification, and e) failure to submit a Phase IV Remedy Implementation Plan (RIP) within three years of the effective date of Tier Classification. Identified deficiencies of MCP requirements included: a) failure to re-score a disposal site upon obtaining new or additional data, facts or other information which is reasonably likely to result in a score which would cause reclassification of the disposal site from Tier II to Tier I. The site was originally classified as Tier II based on its location outside a groundwater resource area. [Recent delineation of a local Zone II](#) currently includes the site within its boundaries. Therefore, the site is subject to Tier I inclusionary criteria in accordance with 310 CMR 40.0520(2). (Barnstable/Hyannis, 4-1179, NON-SE-99-3A-017, February 16, 1999).

Non-Responder Enforcement

DEP recently issued over 100 Notices of Noncompliance (NONs) to non-responders for failure to submit required documentation indicating that response actions are being performed at sites. The compliance rate following the NON has been almost 100% for violations in the front end (prior to the site becoming a default Tier IB site) and about 60% compliance for default Tier IB sites. To date, the Department has issued 7 monetary penalties ranging between \$500 to \$3,000 to parties that did not comply after receiving the NON.

Helpful Hint

The Bureau of Waste Site Cleanup has developed a searchable database on the Internet called *Web Sites*.

This Web page allows the user to choose one or more keywords to find a specific site or list of sites (e.g. list of sites in the town of Woburn). A user can retrieve and print a list of sites by typing in a city, street, status, site name or release tracking number. All 21E releases notified from 1987 to the present will be updated on this page monthly.

Web Sites can be found on the DEP BWSC home page or through the Internet address: www.state.ma.us/dep/bwsc/sites/report.htm

If you have any questions concerning this information, please contact:
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Updated March 26, 1999



Audit and Enforcement Update March 1999

Audit Findings for March:

The Department completed eighteen (18) audits in March 1999. Seven (7) of those audits did not require further fieldwork. Eleven (11) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in March include:

1. Following an audit of a Tier Classification of a gasoline sales and service facility site, the Department issued a Notice of Noncompliance (NON) for violations of MCP requirements. The Numerical Ranking System (NRS) scoresheet was prepared without benefit of a Phase I - Initial Site Investigation (PHI). Components of the NRS scoresheet including exposure point pathways, disposal site characteristics, human population and land uses, and ecological population were based on telephone interviews. Based on these telephone interviews, conducted approximately seven years following removal of three gasoline underground storage tanks (USTs) at the site, it was determined that impacted soil and groundwater existed at the site. The assessment of the site, on which the Tier Classification was based, failed to meet performance standards for Tier Classification.

Identified violations of MCP requirements include:

- a. failure to submit a PHI in support of the Tier Classification,
- b. failure to submit a Phase II Comprehensive Site Assessment (PHII) and if applicable a Phase III Remedial Action Plan (RAP) within two years of the effective date of Tier Classification, and
- c. failure to submit a Phase IV Remedy Implementation Plan (RIP) within three years of the effective date of Tier Classification.

The Department required submission of an Audit Follow-up Plan

outlining the objective and proposed schedule for correction of identified violations. (New Bedford, NON-SE-99-3A-020, 4-0593, March 5, 1999).

2. Following an audit of a Class C Response Action Outcome (RAO), the Department issued a Notice of Audit Finding (NOAF) which found that the audited response actions comply with the applicable requirements and that information submitted to the Department adequately documents those actions. The site is an industrial property utilized for research and development, manufacturing and chemical production. Eighteen USTs with a combined capacity of approximately 450,000 gallons are believed to be the source of groundwater volatile organic compounds (VOC) contamination present in both shallow and deep bedrock fractures. Potential receptors of groundwater contamination from the site include a brook, a reservoir, and adjacent wetlands. A groundwater recovery and treatment system has been operating at the site since 1984. The Class C RAO indicated that a condition of no significant risk exists for the site as supported by a Method 3 risk characterization, the sources of contamination have been eliminated or controlled and that operation of the groundwater recovery and treatment system along with semi-annual groundwater monitoring will continue as a temporary solution. (Waltham, 3-0451, March 11, 1999).
3. Following an audit of a Tier Classification submittal and Release Abatement Measure (RAM) at a gasoline sales and service facility, the Department issued a NON for violations and a deficiency of the MCP and requested submittal of an Audit Follow-up Plan.

Identified violations of MCP requirements included:

- a. failure to complete minimum public involvement requirements,
- b. failure to submit a Phase III Remedial Action Plan (RAP) within two years of the effective date of Tier Classification,
- c. failure to submit a Phase IV Remedy Implementation Plan (RIP) within three years of the effective date of Tier Classification, and
- d. failure to submit multiple RAM Status reports within applicable deadlines (120 days following submittal of a RAM Plan and every six months thereafter - for Tier Classified Sites).

The identified deficiency noted that the disposal site score on the NRS scoresheet was incorrectly calculated due to a mathematical error. However, the corrected score did not change the site classification as Tier II. (New Bedford, 4-0543, NON-SE-99-3A-022, March 17, 1999).

4. Following an audit of a Class A-3 Response Action Outcome (RAO), the Department issued a Notice of Noncompliance (NON) which identified several violations and deficiencies of the MCP and requested retraction of the RAO Statement, termination of the Activity and Use Limitation (AUL), and submittal of a Tier Classification in order to conduct further remedial response actions at the site. The site was formerly a vacant lot. Information regarding historical uses and ownership was not provided. Concentrations of total petroleum hydrocarbon (TPH), lead, mercury, and 1,3,5-trimethylbenzene were detected in soils at the site in exceedence of their respective reportable S-1 soil concentrations. Assessment of soil and groundwater at the site included both soil boring and test pit investigations. TPH and VOC contamination was detected in groundwater and TPH, VOC, metals, polycyclic aromatic hydrocarbons (PAHs), pesticides, and polychlorinated biphenyls (PCBs) were detected in soil. A RAM Plan indicated that excavation of the contaminated soil was not feasible due to the high cost of out-of-state disposal. The contaminated soils were proposed to be contained in-situ by a "concrete vault". Following presumptive approval of the RAM, a twelve-inch thick concrete vault was constructed to contain the soils. The Method 1 risk characterization noted that a level of no significant risk had been achieved through use of an AUL, which requires maintenance of the concrete vault and prohibits any excavation within the concrete vault area. Groundwater contamination was determined to be below applicable GW-2/GW-3 standards. Soil was classified as S-3. Lead, mercury, and PAHs were indicated above applicable S-3 soil standards. However, the risk assessment did not compare the reported contaminant concentrations to applicable soil standards but indicated that the Upper Concentration Limit (UCL) was not exceeded in any samples analyzed. A funeral home building has since been constructed on a portion of the site and currently covers the concrete vault, which is incorporated as a portion of the building's basement floor.

Identified violations of MCP requirements include:

- a. failure to submit multiple RAM Status reports within applicable deadlines (120 days following approval of a RAM Plan and every six months thereafter - for non-Tier Classified Sites),
- b. failure to complete a Phase III identification, evaluation and selection of comprehensive remedial action alternatives prior to implementation of a cap as part of a Permanent Solution [310 CMR 40.0442(3)] (The concrete vault was constructed as a RAM),
- c. failure to identify the source and extent of release,

- d. failure to eliminate or control the source of release,
- e. failure to support the RAO by assessments and evaluations which are consistent with the Response Action Performance Standard (RAPS),
- f. failure to demonstrate a level of no significant risk (concentrations of soil contaminants exceed applicable Method 1 standards),
- g. inappropriate use of an AUL (An AUL may not be used to support a condition of no significant risk when using Method 1 if the applicable Method 1 standards are not met),
- h. failure to copy the Department on applicable public notices of an AUL.

Identified deficiencies of MCP requirements included:

- a. failure to properly identify exposure points and exposure point concentrations in the Method 1 risk characterization,
- b. failure to properly implement several requirements for the content of a Notice of AUL.

(Boston, 3-13951, NON-NE-99-3A-004, March 30, 1999).

Consent Order

The Department entered into an Administrative Consent Order with Penalty (ACOP) with Eastern Electric Apparatus Repair Company of Chicago (Eastern) for improper hazardous and remediation waste management. Eastern agreed to test a remaining fuel oil tank on-site and submit the results to the Department and to pay a \$16,500 penalty. (Springfield, ACOP-WE-98-3012, March 5, 1999).

Helpful Hint by BWSC - NERO

Recently, a number of Immediate Response Action (IRA) and Release Abatement Measure (RAM) Status Reports have been submitted to the Department which contain Plan amendments, updates and/or modifications to previously approved IRA or RAM Plans that fail to indicate this information on the accompanying IRA or RAM Transmittal Form BWSC-105 or BWSC-106, respectively. This practice does not meet the requirements of the MCP.

Any updated and/or modified IRA or RAM Plan *must* be accompanied by an appropriate IRA or RAM Transmittal Form BWSC-105 or BWSC-106 *which clearly indicates that the accompanying submittal is an update or modification of a previously approved IRA or RAM Plan.* To accomplish this, a checkmark must be placed in the indented box of Section B of Transmittal Form BWSC-105 or BWSC-106 and the submittal date of the previously approved Plan provided on the designated line.

Any written update and/or modification to a previously approved IRA or RAM Plan being conducted at a 21E disposal site prior to tier classification *must* wait for 21-day presumptive approval prior to its initiation.

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Updated April 23, 1999



Audit and Enforcement Update April 1999

Audit Findings for April:

The Department completed nine (9) audits in April 1999. Six (6) of those audits did not require further fieldwork. Three (3) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in April include:

1. Following an audit of a Downgradient Property Status (DPS) Opinion filed for a public storage facility site, the Department issued a Notice of Audit Findings (NOAF) with an Interim Deadline for submittal of a Tier Classification and/or Tier I permit or a Response Action Outcome (RAO). Historical uses of the site included industrial and manufacturing processes. The site reportedly contained underground storage tanks (USTs) used to store gasoline and potentially to store hazardous materials including proxline, butyl acetate, alcohol, and acetone as documented in historical permits. Assessment of the site identified dissolved chlorinated solvents in the groundwater inclusive of tetrachloroethene, trichloroethane (TCE), 1,1,1 trichloroethane, and 1,1 dichloroethene (DCE). Both TCE and 1,1 DCE were identified above their respective reportable concentrations. A DPS Opinion was filed asserting that "the source of chlorinated solvents is located upgradient of the subject site." During the audit, the Department communicated with the Potentially Responsible Party (PRP) that there was insufficient information provided to support the DPS Opinion and requested voluntary termination of the DPS Opinion. At the request of the PRP, a two-week extension was granted to allow the PRP to complete additional subsurface investigations to support the DPS Opinion. The DPS Opinion was voluntarily terminated as a result of these investigations. (Boston-Brighton, 3-14605, April 14, 1999).
2. Following an audit of a Tier II Extension, Phase II Comprehensive Site Assessment (PHII) and Supplemental Phase II Site

Assessment, the Department issued a Notice of Noncompliance (NON) for several violations of the MCP and requested submittal of an Audit Follow-up Plan. The site is currently an active retail gasoline station. The site is located within a Zone II for two (2) municipal water supply wells. Assessment activities concluded that spills from fill pipes or USTs are the likely source of release for the site. As supported by a Method 1 risk characterization, contaminate compounds exceeding applicable GW-1 groundwater standards include 1,1-dichloroethane, carbon tetrachloride, benzene, toluene, ethylbenzene, and xylene. A pilot test for a soil vapor extraction and air sparging system indicated that it would be an effective remedial option for the site. To date, this remedial option has not been implemented. Oxygen Release Compounds (ORC) were at one time installed in select monitoring wells on the site to encourage bioattenuation of contaminants. The supplemental PHII investigation at the site revealed additional contaminate compounds exceeding applicable method 1 standards including C11-C22 aromatics and several target analytes in soil, as well as, naphthalene, methyl tert-butyl ether (MTBE), C9-C10 aromatics, and ethylene dibromide in groundwater. Based on the information collected during the supplemental PHII investigation, the report concluded that a Response Action Outcome (RAO) was not possible for the site and indicated that the results of the PHII would continue to be evaluated until such time as contaminant concentrations in soil and groundwater dropped to acceptable levels. Quarterly groundwater monitoring was proposed for the site until such time as the concentration of contaminants in the groundwater has sufficiently attenuated to allow an RAO to be filed. Identified violations of MCP requirements included:

- a. failure to submit a timely Tier II extension,
- b. failure to conduct a RAM in accordance with the MCP,
- c. failure to complete a PHII in accordance with the MCP,
- d. failure to undertake an Immediate response Action (IRA) to evaluate and/or mitigate the impact of the Substantial Release Migration (SRM) condition,
- e. failure to provide laboratory analytical data that is scientifically valid and defensible, and of a level of precision and accuracy commensurate with its stated or intended use,
- f. failure to complete a Phase IV Remedy Implementation Plan within three years of the effective date of Tier Classification, and
- g. failure to meet the Response Action Performance Standards (RAPs).

(Wrentham, 4-00500, NON-SE-99-3A-024, April 20, 1999)

3. Following an audit of a RAO Statement for a truck rollover

accident, the Department issued a Notice of Audit Finding (NOAF)/Audit Completion which found that the audited response actions comply with the applicable requirements and that information submitted to the Department adequately documents those actions. The truck rollover accident resulted in a release of 15 gallons of diesel fuel to the roadway pavement and a roadway embankment. Response actions taken included deployment of absorbent materials on the roadway and excavation of impacted surficial soils along the roadway embankment. The Class A-1 RAO indicated that a condition of no significant risk was achieved as a result of response actions taken to address the release. (Fall River, 4-13771, April 26, 1999).

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Updated May 21, 1999



Audit and Enforcement Update May 1999

Audit Findings for May:

The Department completed eight (8) audits in May 1999. Three (3) of those audits did not require further fieldwork. Five (5) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in May include:

1. Following an audit of a Numerical Ranking Scoresheet (NRS) and Release Abatement Measure (RAM) Plan filed for an industrial site, the Department issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) with an Interim Deadline for additional field work and submission of required status reports. A continuous release of No. 6 fuel oil to a water-filled wheel pit within an on-site building has been documented at the site since 1983. The release, with estimates of as much as 17,000 gallons, is a result of leaking from one of three underground storage tanks (USTs). The site maintains an on-site non-potable groundwater supply well and is located within a Zone II. Absorbent pads located upon surface water within the wheel well were approved as a RAM. A limited amount of assessment has been conducted to identify the extent of contamination at the site. The NRS identified the site as Tier II with a total site score of 303 points. Identified violations of MCP requirements included:
 - a. failure to provide sufficient information in the Phase I report to meet the requirements for completion of the NRS,
 - b. failure to consider all data, facts and other information known about the disposal site in rendering the Tier Classification opinion
 - c. failure to categorically classify the site as Tier I in accordance with 310 CMR 520(2)(a),
 - d. failure to evaluate groundwater when documenting groundwater exposures for the purpose of Tier Classification,
 - e. failure to provide a toxicity score in the NRS as applicable,

- f. failure to provide reference and/or explanation for score amendment in NRS section VI, and
 - g. failure to meet applicable RAM status report deadlines. (Colrain, 1-11974, NON-WE-99-3039, May 18, 1999).
- 2. Following an audit of a Downgradient Property Status (DPS) Opinion for a vacant commercial/residential property, the Department issued a Notice of Audit Finding (NOAF)/Audit Completion which found that the audited actions comply with applicable requirements and that information submitted to the Department adequately documents those actions. Petroleum hydrocarbon fractions exceeding applicable GW-1 reportable concentrations were initially reported at the site. Assessment of the site included installation of five soil borings and associated monitoring wells. Elevated levels of contaminants in groundwater were identified at upgradient sampling locations. Documented current and historical on-site uses of petroleum included a single 275-gallon aboveground storage tank. Documented upgradient uses of petroleum include an automobile repair facility and gasoline sales facility neither of which is a reported site. Further upgradient is a gasoline sales facility currently conducting comprehensive MCP response actions for releases of petroleum. As a result of the Audit, the Department issued Notices of Responsibility to two businesses upgradient of the property claiming DPS. Those businesses have initiated response actions at the site. (Easton, 4-14270, May 19, 1999).
- 3. Following an audit of a RAM, Response Action Outcome (RAO) Statement and Activity & Use Limitation (AUL) for a Tier IB disposal site, the Department issued a Notice of Noncompliance (NON) for violations of the MCP and requested revision/retraction of the RAO and Termination of the AUL. The site is currently an inactive retail gasoline station. Assessment activities conducted at the site between 1989 and 1994 documented elevated concentrations of petroleum compounds in both soil and groundwater at the site as well as separate phase product as a result of a leaking UST source. Assessment included a total of three (3)-monitoring wells. The RAM proposed removal of "both identified sources of contamination on-site: contaminated soil and floating product on groundwater." Two USTs, approximately 327 cubic yards of impacted soil, and 85 gallons of "waste fuel oil" were reportedly removed from the site. Existing monitoring wells were destroyed during RAM activities. Post-RAM assessment of site conditions was not conducted. A Class A-3 RAO was filed. No risk assessment was conducted to support the RAO. The AUL was filed eleven months after the RAO. Identified violations of MCP requirements included: a) failure to conduct a risk characterization, b) failure to include adequate content for an AUL, c) failure to conduct minimum public involvement

activities, and d) failure to meet the Response Action Performance Standards (RAPs). (Fall River, 4-00786, NON-SE-99-3A-034, May 21, 1999).

Consent Order

The Department entered into an Administrative Consent Order with Penalty (ACOP) with Hardwick Kilns Division of Cersosimo Lumber (Hardwick Kilns) of Hardwick, MA for violations of the MCP including failure to notify the Department of a release of oil and hazardous materials within 500 feet of a private well and failure to comply with the requirements of a Limited Removal Action. Hardwick Kilns agreed to pay an \$8,500 penalty. (Hardwick, ACOP-CE-99-3006, May 18, 1999).

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Updated July 14, 1999



Audit and Enforcement Update June 1999

Audit Findings for June:

The Department completed twenty-six (26) audits in June 1999. Nineteen (19) of those audits did not require further fieldwork. Seven (7) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in June include:

1. Following an audit of a Class C Response Action Outcome (RAO) Statement filed for a gasoline filling station and convenience store occupied property, the Department issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) with an Interim Deadline for revision of the Phase III report, retraction of the Class C RAO, and submission of a Tier II Classification extension request. The site has been operated as a gasoline filling station and automotive repair facility since at least 1965. Contamination was first reported at the site in March 1989. Removal and replacement of underground storage tanks (USTs) was initiated in October 1989. Approximately 1,000 tons of contaminated soil was removed during tank replacement activities. Separate phase gasoline in groundwater, as well as, petroleum contaminants in both soil and groundwater media were identified through assessment. A 1990 Soil Vapor Extraction (SVE) pilot test concluded that soils at the site were amenable to remediation by SVE. A Waiver of approvals was granted in 1991. During the five year waiver period, response actions included the annual collection and analysis of groundwater samples. Following receipt of two (2) Tier II Classification Extension requests, the Department received a Phase II Comprehensive Site Assessment (PHII) and Phase III - Remedial Action Plan (RAP). The RAP evaluated six remedial options and selected "calcium peroxide additions as socks in monitoring wells and as slurry injection in boreholes". A soil vapor extraction (SVE)/air sparge system was to be employed in the event that the calcium peroxide does not result in contaminant breakdown. Following a third Tier II Extension

request, the Department received an addendum to the PHII and PHIII/RAP as well as a Class C RAO. The revised PHIII/RAP recommended natural attenuation be implemented as the selected remedial response. Information supporting the alternative remedial response was not included in the PHIII/RAP.

Identified violation(s) of MCP requirements included:

- a. failure to describe and document the information, reasoning and results used to identify and evaluate remedial action alternatives in sufficient detail to support the selection of the proposed remedial action alternative.

Identified deficiencies of MCP requirements included:

- a. failure to evaluate technologies which are reasonably likely to achieve a Permanent Solution, and
- b. failure to submit applicable Tier II Extension requests when response actions beyond the period evaluation of a Temporary Solution are being conducted.

The Department determined that existing historical groundwater analytical data demonstrate that the natural attenuation of the gasoline contamination present at the site has not occurred to any measurable extent over the past six years. In addition, although separate-phase petroleum had last been detected in 1992, a recent groundwater monitoring event revealed that separate-phase petroleum is still present in the source area. As such, sufficient information exists to rule out the selection of monitored natural attenuation as the sole remedial response alternative. (Springfield, 1-00664, NON-WE-99-3A-040, June 3, 1999).

2. Following an audit of a Class A-2 RAO Statement for a residential property, the Department issued a Notice of Audit Finding (NOAF) which did not identify violations or deficiencies in the materials examined during the course of the audit that would require further action. The RAO was submitted in response to a release of oil to soil discovered during removal of a 275-gallon fuel oil underground storage tank (UST). A soil venting, soil assessment and groundwater assessment program was initiated as an Immediate Response Action (IRA). Groundwater samples were obtained from monitoring wells installed in and around the former location of the removed tank excavation. Detected soil and groundwater contaminant concentrations did not exceed applicable MCP Method 1-risk characterization standards. Therefore conditions at the site do not pose a condition of significant risk to human health, safety, welfare, or the environment. (Shrewsbury, 2-12315, June 15, 1999).

3. Following an audit of an Immediate Response Action (IRA) Completion Statement and RAO Statement and Activity & Use Limitation (AUL) for a Tier IB disposal site, the Department issued a NOAF/NON for violations of the MCP and requested revision/retraction of the RAO. The site is currently under development for light manufacturing. The site has formerly been used for jewelry manufacturing. During construction activities at the site, a 1,000-gallon UST was ruptured causing a release of petroleum to soil and groundwater. The petroleum release was addressed through an Immediate Response Action (IRA) inclusive of limited soil and groundwater removal. Subsequent assessment activities documented elevated concentrations of chlorinated volatile organic compounds (VOC) compounds in groundwater. In an effort to prevent VOC vapors from entering the building under construction on the site, a vapor barrier and passive vent system was installed prior to pouring the concrete floor. The barrier would act to vent any accumulated vapors to the atmosphere. A Class A-2 RAO was filed for the site.

Identified violations of MCP requirements included:

- a. failure to notify the Department of a release (chlorinated),
- b. failure to obtain approval for conducting a Release Abatement Measure (RAM),
- c. failure operate a passive venting system without appropriate off-gas controls,
- d. failure to implement an Activity & Use Limitation, and
- e. failure to identify the extent of VOC contamination in groundwater.

The Department entered into an Administrative Consent Order for violations of RAM and off-gassing requirements. (Attleboro, 4-13500, NON-SE-99-3A-021, June 16, 1999).

June Consent Order(s)

- The Department entered into an Administrative Consent Order with Penalty (ACOP) with Matrix Realty (Matrix) of Attleboro, MA for violations of the MCP. A Release Abatement Measure (RAM) was implemented without DEP approval, and a soil vapor extraction system was installed without appropriate emission controls. A penalty of \$10,000 was paid. (Attleboro, ACOP-SE-99-3A-003, June 15, 1999).
- The Department entered into an ACOP with Tage Associates Limited Partnership (Tage) for multiple violations of the MCP. Tage failed to notify DEP within 120 days of discovering contamination above reportable concentrations in both groundwater and soil. Tage agreed to pay a \$7,000 penalty.

(Somerville, ACOP-NE-99-3R-001, June 18, 1999).

- The Department entered into an ACOP with Simplex Time Recorder (Simplex) of Gardner, MA for violations of the MCP. Simplex failed to notify DEP within 120 days of discovering contamination above reportable concentrations in both groundwater and soil. Simplex agreed to pay a \$2,000 penalty. (Gardner, ACOP-CE-99-3003, June 18, 1999).

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Updated August 23, 1999



Audit and Enforcement Update July/August 1999

Audit Findings for July/August:

The Department completed twenty (20) audits in July/August 1999. Eleven (11) of those audits did not require further fieldwork. Nine (9) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in July/August include:

1. Following a file review audit of a Phase II - Comprehensive Site Assessment (PHII) completed for a site located at a gasoline sales and service facility, the Department issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) with an Interim Deadline for an Audit Follow-up plan to conduct additional PHII and IRA assessment activities. Residents in the vicinity of the gasoline sales and service facility have reported gasoline odors in their homes to both the local Board of Health and the Department. Other monitoring reports found in the site file documented off-site migration of petroleum contaminants in groundwater in the vicinity of subsurface utilities. The Department determined that there is significant evidence of a potential migration pathway for contaminants by preferential migration along, beneath or within the subsurface utilities into homes and the environment. The Department requested additional assessment. (Burlington, 3-1438, NON-NE-99-3E-031, July 1, 1999).
2. Following an audit of a Downgradient Property Status (DPS) Opinion for a municipal property, the Department issued a Notice of Audit Finding (NOAF)/Interim Deadline that identified violations in the actions audited. The property is currently used as a highway depot. Assessment of the property identified petroleum contaminants in groundwater exceeding applicable reportable concentrations (RTN 4-12144). Additional assessment of the property noted the presence of 1.5 feet of non-aqueous phase liquid (NAPL) requiring the initiation of an Immediate Response Action (IRA) (RTN 4-12710). A DPS opinion (RTN 4-12144) was

submitted for the NAPL condition asserting that the contamination may originate from USTs located at a documented disposal site located 150 feet east and topographically uphill from the highway depot property. Supporting information for the DPS opinion included town record reviews indicating no prior development of the property, and groundwater contours documenting inferred groundwater flow direction up and cross gradient. However, Department research revealed that the property was formerly developed as a gasoline station. Response actions for NAPL removal have continued as an IRA (RTN 4-12710).

Identified violation(s) of MCP requirements included:

- a. failure to meet the performance standard for a DPS opinion with regard to documenting past uses of the property,
- b. failure to complete appropriate public involvement requirements,
- c. failure to comply with applicable IRA status report submittal requirements,
- d. failure to ensure that environmental sample collection and analysis is scientifically valid and defensible (several Chain of Custody forms were altered).

The Department requested additional information in support of or retraction of the DPS Opinion as well as submittal of appropriate IRA Status/Completion reporting. (Bourne, 4-12144, July 1, 1999).

3. Following an audit of a Class A-2 RAO Statement for a release at a residential property, the Department issued a Notice of Audit Finding (NOAF) which deemed response actions to be adequate. The RAO was submitted in response to a release of oil to soil discovered during removal of an underground storage tank (UST). A Limited Removal Action (LRA) and subsequent Release Abatement Measure (RAM) were conducted for removal of impacted soil. Assessment of the release included confirmatory soil samples collected from the excavation as well as soil and groundwater from monitoring wells installed around the former location of the removed tank excavation. Detected soil and groundwater contaminant concentrations did not exceed applicable MCP Method 1 risk characterization standards. Therefore, conditions at the site do not pose a condition of significant risk to human health, safety, welfare, or the environment. (Auburn, 2-12562, July 9, 1999).
4. Following an audit of a Waiver Completion Statement filed for a release at an industrial facility, the Department issued a NOAF/NON with an Interim Deadline for a plan to conduct additional site investigations as well as a plan for continued

evaluation of the efficacy of achieving a permanent solution at the site. The Waiver Completion Statement indicating that a temporary solution was achieved in response to a release of fuel oil from a 20,000-gallon UST in October 1986. Approximately 6,000 to 8,000-gallons of fuel oil were released to both soil and groundwater. Passive and active oil recovery systems were employed to reduce NAPL on groundwater. Approximately 1,400 gallons of oil were recovered through these actions. Recent groundwater gauging noted the presence of NAPL. Dissolved phase petroleum as total petroleum hydrocarbons (TPH) and Extractable Petroleum Hydrocarbon (EPH) is present in groundwater at concentrations exceeding Method 1 GW-3 standards. No quantitative analysis of subsurface soil for TPH has been performed. No soil samples were collected during UST removal activities. The PHII risk characterization assumes that contaminated soils left in place following UST removal are more than 15 feet below grade. The risk characterization was performed in accordance with 310 CMR 40.0000 as a Method 1. Current and foreseeable site use were considered the same. All soil was classified as S-3. A residential exposure scenario was not evaluated. Construction worker exposure was considered minimal and was not evaluated. The presence of NAPL was found to preclude achievement of No Significant Risk. Based on its review, the Department determined that response actions required to achieve a Temporary Solution have not been adequate, and that the level of assessment completed during the comprehensive site assessment did not meet the performance standards outlined in the MCP.

Identified violation(s) of MCP requirements included:

- a. failure to complete investigations that identify the source and extent of the release, exposure points and exposure point concentrations, and background levels of oil or hazardous materials, and
- b. failure to provide a plan for the identification and development of a feasible permanent solution.

(Springfield, 1-00205, NON-WE-99-3059, July 16, 1999).

5. Following a comprehensive audit of a Phase II Comprehensive Site Assessment and Tier II Extension Submittal for a site located at a former gasoline sales and service facility, the Department issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) for failure to submit the Tier II Extension Request within the appropriate deadlines and failure to complete a Phase II Risk Characterization for the site. A Waiver of Department approvals to conduct response actions was issued in December 1991 for the site, beginning in 1996, three Tier II

Extension Submittals to request additional time in order to complete the Risk Characterization were submitted. However, the rationale for the last delay was that the pending VPH/EPH soil standards might affect the Risk Characterization findings. The audit revealed that the PHII had been completed, but no additional soil characterization had been conducted. The NOAF indicated that, in addition to filing late Tier II Extension Requests, the PRP had failed to submit an adequate plan and schedule to achieve, at minimum, a Class C Response Action Outcome at the disposal site within one year of the effective date of any of the Tier II Extensions. The Department's NOAF/NON included a of 60 days to submit a Phase II Comprehensive Site Assessment (addendum report) and Phase III Identification, Evaluation and Selection of Comprehensive Response Actions. (Brockton, 4-00259, NON-SE-99-3A-044, August 17, 1999).

July/August Consent Order(s)

1. The Department entered into an Administrative Consent Order with Penalty (ACOP) with Getty of Milford, MA, for violations of the MCP, specifically, failure to notify DEP within 120 days of a release of TPH and 2-methylnaphthalene in soil at concentrations exceeding the applicable Reportable Concentrations (RCs). A penalty of \$4,500 was assessed. (RTN 2-12489, ACOP-CE-99-3011, August 2, 1999).
2. The Department entered into an ACOP with Land Air Express of New England, Williston, VT, for failure to notify of a release of silver nitrate, followed by improper transport, handling, and disposal of this hazardous material. Multiple violations of M.G.L. chapters 21E and 21C were cited. A penalty of \$19,500 was assessed. (ACOP-WE-99-3006, August 17, 1999).

Helpful Hint

Pursuant to 310 CMR 40.0183(5), a copy of a ***Downgradient Property Status (DPS) Opinion*** must be provided to owners and operators of abutting properties upgradient and downgradient of the DPS property and to the owners and operators of any property which is a known or suspected source of the release. The DPS Opinion includes a technical explanation and documentation to support the DPS assertion. A copy of DEP Transmittal Form BWSC-104 is not sufficient to meet this requirement. The DPS notification requirement differs from the notices required for other DEP BWSC submittals, which only require that notice of the availability of the submittals be sent to local officials. This difference has led to some confusion. Concurrent with submitting copies of the DPS Opinion to the parties previously mentioned, a written notice of the availability of the DPS Opinion must be sent to the Chief Municipal Officer and Board of Health in the community where the DPS

property is located; a copy of each written notice must also be provided to the DEP. For those DPS submittals that don't clearly indicate that copies of the DPS Opinions have been sent to the appropriate parties, the Audit staff has been calling the PRPs and/or LSPs and requesting that copies of the Opinions be transmitted accordingly.

The reader is also advised that the DPS regulations will be modified slightly in the upcoming MCP revisions effective October 29, 1999; the revisions can be downloaded from the DEP's website at www.state.ma.us/dep/bwsc/regs.htm. Please see 310 CMR 40.0183 for full requirements of the DPS.

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Updated: September 28, 1999



Audit and Enforcement Update September 1999

Audit Findings for September:

The Department completed thirteen (13) audits in September 1999. Ten (10) of those audits did not require further fieldwork. Three (3) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in September include:

1. Following an audit of an Immediate Response Action (IRA) and Response Action Outcome (RAO) completed for a site located at an industrial facility, the Department issued a Notice of Audit Findings (NOAF) which did not identify violations or deficiencies in the materials examined during the course of the audit that would require further action. Following the sudden release of approximately 250 gallons (approximately 180 pounds) of dilute ethyl alcohol solution from a process vessel into a concrete, secondary containment dike, the Department orally approved an IRA. The IRA approval was granted for recovery and proper disposal of the material. The material was subsequently pumped to a process sewer system for pre-treatment at its wastewater equalization and treatment facility before subsequent discharge to the municipal wastewater treatment plant. Since no material was released to soils or groundwater, no monitoring data was collected from these media. The area was screened for volatile organic compounds (VOC) with an organic vapor analyzer (OVA) and no VOC were detected above background conditions. A Class A-1 RAO Statement was filed documenting a conclusion of a condition of No Significant Risk. (Springfield, 1-12139, September 24, 1999).
2. Following an audit of a Downgradient Property Status (DPS) Opinion filed for a site located within undeveloped property, the Department issued a NOAF/Notice of Noncompliance (NON) that identified a violation in the actions audited. The undeveloped property is currently comprised of four (4) separate lots of land. Assessment of the site located at one of the four lots identified concentrations of petroleum hydrocarbons in groundwater exceeding applicable reportable

concentrations. Petroleum impacts were also documented in a sediment sample collected from along a riverbed adjacent to the site. Soil samples were not collected for laboratory analysis. A Release Notification and DPS Opinion was submitted for the site asserting that the contamination originated from an off-site source. Identified violation of MCP requirements included failure to adequately support a claim of DPS by documenting that the source of the release is located on an upgradient property and that no act of such person claiming DPS has contributed to the release. The Department requested additional information in support of or retraction of the DPS Opinion. (Wareham, 4-12304, NON-SE-99-3A-045, September 24, 1999).

3. Following an audit of a Class A-2 RAO Statement for a site located within a twelve acre undeveloped property, the Department issued a NOAF/NON that identified violations in the actions audited and requested an Audit Follow-up Plan. The RAO was submitted in response to a release of VOCs from 384 55-gallon drums that were accepted as scrap and buried on site. Based on an anonymous tip received by the Attorney Generals Office regarding the dumping, the Department conducted an inspection and uncovered the drums. The site was listed as a confirmed disposal site by the Department, and was listed on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) with the United States Environmental Protection Agency (USEPA). The site is located within a GW-1 groundwater resource area. The drums and approximately 70 cubic yards of impacted soil were subsequently removed from the site. Assessment of the site included confirmatory soil samples collected from the drum excavation as well as soil and groundwater from monitoring wells installed at the site. VOCs were detected in soil media at concentrations up to 5,000 parts per million (ppm). Bis (2-ethylhexyl) phthalate was detected in groundwater at concentrations exceeding the applicable risk characterization standard. Subsequent rounds of groundwater sampling in 1993, 1996, and 1997 did not include an evaluation for Bis (2-ethylhexyl) phthalate. An RAO Statement was filed in March 1997 documenting a conclusion of a condition of No Significant Risk. In response to the audit inspection conducted in August 1999, the Department received an additional groundwater investigation and monitoring report documenting the results of an August 1997 and January 1998 groundwater sampling event. During both events, Bis (2-ethylhexyl) phthalate was detected in groundwater at concentrations exceeding the applicable MCP Method 1 GW-1 risk characterization standard. It was the Licensed Site Professional (LSP)'s opinion that the Bis (2-ethylhexyl) phthalate may be leaching out of the materials used to construct and/or sample the monitoring well and therefore, may not actually be in the groundwater at the site.

Identified violations of the MCP include:

- a. failure to timely submit a LSP Evaluation Opinion for a

Confirmed Disposal Site,

- b. failure to support a RAO by assessments of sufficient scope, detail and level of effort to characterize the risk of harm to health, safety, public welfare and the environment posed by the disposal site.

The Department requested the preparation of an Audit Follow-up Plan to obtain additional information to support the March 1997 RAO or retraction of the March 1997 RAO. (Middleborough, 4-00110, September 27, 1999).

September Consent Order(s)

1. The Department issued a Notice of Intent (NOI) to place a priority lien on Lynch's Laundromat and Car Wash in Hanson. The company discharged to a septic system. Dry cleaning solvent migrated in groundwater impacting Hanson's public drinking water supply well located across the street. The lien would seek to recover DEP investigation, assessment and response costs. The Southeast Region Site Management Section and Assistant Regional Counsel coordinating with the Boston Office of General Counsel initiated this case. Lynch's has 21 days from the date of the notice postmark to appeal the action. (RTN 4-0781, September 1, 1999).
2. The Department entered into an Administrative Consent Order with Penalty (ACOP) with Kevin Doherty, a Licensed Site Professional, for non-compliance with requirements of the Massachusetts Contingency Plan (MCP). Specifically, Mr. Doherty submitted an IRA Plan to the Department, which contained false, inaccurate, and misleading information. A penalty of \$2,000 was assessed. (RTN 3-15660, ACOP-NE-99-3A001, September 17, 1999).
3. The Department entered into an ACO with the owner of property located on State Road in Westport. The property was the site of an illegal drug-manufacturing laboratory. Samples taken from the septic system at the time of a raid in January 1998 revealed levels of acetone, MtBE, and methylene chloride. The response action and the ACOP with an escrow agreement were jointly handled by the Southeast Region Emergency Response Section, Assistant Regional Counsel and the U.S. Attorney's Asset Forfeiture Division. Proceeds from the sale of the property were to be spent on cleaning up the contamination. (RTN 4-13640, ACOP-SE-99-3P-003, September 21, 1999).
4. The Department entered into an Administrative Consent Order with Penalty (ACOP) with Northeastern University related to response actions undertaken during construction of a dormitory. Contaminated soil was re-used in violation of an approved Release Abatement Measure (RAM) Plan. The RAM Plan approval required the contaminated soil to be disposed of at a suitable off-site location.

Northeastern agreed to pay \$10,000 to the Commonwealth and \$10,000 to the Charles River Watershed Association to perform a Supplemental Environmental Project (SEP) targeting pollutant studies in the Charles River Basin (RTN 3-16610, ACOP-NE-98-3R006).

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Updated: October 25, 1999



Audit and Enforcement Update October 1999

Audit Findings for October:

The Department completed nineteen (19) audits in October 1999. Nine (9) of those audits did not require further fieldwork. Ten (10) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in October include:

1. Following an audit of a Phase II Comprehensive Site Assessment (PHII) completed in February 1999 with an addendum in June 1999 for a Tier IC site, the Department issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) that identified violations in the actions audited. The site is located at a gasoline station, apartment complex, and autobody garage facility and was first listed as a Location to be Investigated in 1990 (RTN 2-00815). The source of contamination is most likely the result of leaking underground storage of gasoline and diesel fuels since 1949. Two private, potable bedrock water supply wells and one non-community public potable water supply bedrock well are located on-site. The presence of benzene in one potable well at Imminent Hazard levels (578 parts per billion - ppb) was reported to the Department in August 1994 (RTN 2-10443).

An Immediate Response Action (IRA) was conducted and granulated activated carbon (GAC) treatment was added to the well. This well serves potable water to one on-site single family dwelling, eleven apartment units, and a construction garage. Apartment tenants are required by the owner to sign an agreement not to consume tap water. Detection of Benzene and Methyl tert-butyl ether (MTBE) in a second on-site well prompted additional GAC treatment. This well serves potable water to the on-site convenience store. Quarterly monitoring of the wells and bi-annual GAC changes were proposed for the IRA. GAC breakthrough in January 1998 prompted bimonthly monitoring. Detection of petroleum compounds in surface waters at the site in November 1998 required and IRA to address a condition of Substantial Release Migration (SRM) (RTN 2-12567). The PHII and Addendum

report concluded that further assessment was necessary to fully delineate horizontal and vertical extent of contamination at the site.

Identified violations of MCP requirements include:

- a. Failure to meet response action deadlines for the PHII Scope of Work, PHII, Phase III - Remedial Action Plan, and Phase IV - Remedy Implementation Plan,
- b. Failure to meet PHII performance standards and report requirements (Includes: failure to determine the horizontal and vertical extent of soil and groundwater contamination, failure to evaluate for all contaminants of concern (EPH, lead, and ethylene dibromide), failure to evaluate hydrogeologic characteristics of site, failure to perform appropriate soil EPC calculations, failure to conduct a Method 3 risk characterization for surface water contamination, failure to conduct adequate sampling for groundwater EPC calculations at potable wells).

The Department requested the preparation of an Audit Follow-up Plan to address violations of the PHII, and completion of the Phase III and Phase IV including proposed submittal deadlines for Department approval. In addition to the NOAF/NON, the Department issued an Interim Deadline letter to conduct an IRA to perform immediate sampling of potential residential receptors in the vicinity of the site.

(Charlton, 2-00815, 2-10433, & 2-12567, NON-CE-99-3046, October 14, 1999).

2. Following an audit of an IRA and subsequent Response Action Outcome (RAO) Statement filed for a site located at a retail gasoline sales facility, the Department issued a NOAF which indicated that the audited actions currently comply, and therefore, no additional actions are necessary. The retail gasoline sales site is comprised of a single-story slab-on-grade building with three underground gasoline storage tanks (USTs).

The Department was notified of a sudden release of approximately 10 gallons of gasoline to the subsurface (and potentially impacting indoor air) that may be causing organic chemical odors to indoor air. An assessment of the underground storage tanks revealed that a release of gasoline was discovered within a pump control vault/manway located above one of the USTs as a result of a leaking fuel line fitting. The leak was repaired and two cubic yards of impacted soil were removed. An assessment of indoor air by Lower Explosive Limit (LEL) and Photoionization Detector (PID) indicated that the reported odors were indicative of ammonia or chlorine. It was determined that the odors were the result of a release of Freon gas into the room during recent coolant replacement activities. Vents were installed in the walls of the building to facilitate passive venting of the structure. A combined

Imminent Hazard Evaluation and IRA Completion Report followed by a Class A-2 RAO were submitted to the Department.

(Springfield, 1-11920, October 21, 1999).

3. Following an audit of an IRA and Downgradient Property Status (DPS) Opinion for a site located at a gasoline sales and service station facility, the Department issued a NOAF/NON terminating the DPS Opinion and requiring a Tier Classification of the site and an Audit Follow-up Plan for completion of Comprehensive Response Actions. The property has been used as a gasoline sales and service station since 1956. Four gasoline USTs, and a fuel-oil UST were present at the site. At the request of the Department, a preliminary site investigation was conducted that included the installation of four soil borings completed as groundwater monitoring wells. Up to one foot of separate-phase product was identified in two of the downgradient monitoring wells (RTN 4-11168).

In September 1998, the Department was notified that 500-gallons of gasoline were "missing" from one of the gasoline USTs. The tanks subsequently failed a tank tightness test. The Department required an IRA Plan for removal of the UST as well as recovery and assessment of the release condition (RTN 4-14164). The IRA Plan recommended "no action" other than monitoring and bailing of existing monitoring wells and "advised against excavation of the tank". On January 8, 1999 the Department received a DPS Opinion for release conditions associated with RTNs 4-11168 and 4-14164 that asserts on off-site upgradient release condition as the source of contamination to the site. On January 14, 1999, the four gasoline USTs were removed in accordance with Fire Department regulations. Two of the USTs exhibited visible holes and significant soil contamination was observed in the tank excavations (RTN 4-14463).

Identified violations of MCP requirements include:

- a. failure to meet the performance standard for DPS,
- b. failure to meet the Response Action Performance Standard,
- c. failure to provide timely Tier Classification of a release condition(s),
- d. failure to provide timely IRA Status Report submissions,
- e. failure to provide timely IRA Plan submissions.

Due to lack of sufficient information to support the DPS Opinion, the Department terminated the Opinion in accordance with 310 CMR 40.0186.

(Taunton, 4-11168, 4-14164, 4-14463, NON-SE-99-3E-071, October 21, 1999).

October Consent Orders

1. The Department entered into an Administrative Consent Order with Penalty (ACOP) with Terranovas' Market of Otis for violations of the MCP. Terranovas' Market failed to provide notification of a 72-hour release condition for which knowledge was obtained on two occasions. Terranovas' Market agreed to comply with future notification requirements of the MCP and submit a Response Action outcome or Tier Classification for the identified release condition. A penalty of \$15,000 was assessed. (RTN 1-12941, ACOP-WE-99-3007, October 13, 1999).
2. The Department entered into an ACOP with B&M Railroad of Williamstown for violations of the MCP. B&M failed to comply with the conditions of a Tier IB Transition Permit and subsequent Notice of Noncompliance (NON). B&M agreed to make timely Comprehensive Response Action submittals to the Department as well as comply with the terms and conditions of the Tier IB permit. A penalty of \$9,750 was assessed. (RTN 1-0367, ACOP-WE-98-3011, October 18, 1999).
3. The Department entered into an ACOP with Raynham Crossing Limited Partnership of Raynham for violations of the MCP. Raynham Crossing Limited Partnership failed to adequately respond to a hazardous materials release on its property. Raynham Crossing Limited Partnership agreed to provide additional data and documentation to support its Response Action Outcome (RAO) statement that a condition of No Significant Risk currently exists at its site or retract the RAO. A penalty of \$12,500 was assessed. (RTN 4-12915, ACOP-SE-99-3A-004, October 25, 1999).

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Updated: November 29, 1999



Audit and Enforcement Update November 1999

Audit Findings for November 1999:

The Department completed nine (9) audits in November 1999. Seven (7) of those audits did not require further fieldwork. Two (2) audits found response actions lacked sufficient fieldwork. Audit findings of particular significance in November include:

1. Following an audit of a Phase II Comprehensive Site Assessment (PHII) and Class A-2 Response Action Outcome (RAO) Statement, the Department issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) that identified violations in the actions audited.

The site is located at a former gasoline station facility. Although vacant, the facility was formerly improved by a gas station kiosk, three underground storage tanks (USTs) and a septic tank/leach field. Separate-phase gasoline was initially identified on the groundwater at the site following a pressure loss in gasoline lines. The USTs were removed from the property in 1985. Dissolved phase gasoline and chlorinated solvents were identified in soil and groundwater samples collected during the UST removal. The site is located within the boundaries of an "Aquifer Protection District" for the Town. Groundwater at the site is therefore categorized as GW-1. A groundwater recovery and treatment system was installed and operated in 1987. A Department Waiver of Approvals was approved in 1993. The groundwater recovery and treatment system was deactivated in 1996 because concentrations of volatile organic compounds met applicable groundwater standards.

In 1998, the Department received a RAO Statement supported by a Method 1 and 2 risk characterization. The Method 2-risk characterization was used to demonstrate that specific hydrocarbon fractions (C5-C8 aliphatics and C9-C12 aliphatics) detected in excess of GW-2 standards would not represent a threat of vapors to potential future site buildings. In addition, that specific hydrocarbon fractions (C9-C12 aromatics) detected in excess of GW-3 standards would not be exceeded at the nearest surface water receptor. The presence of chlorinated solvents at the site in 1985 was attributed to "error". Soil in the former UST area was characterized by two samples collected at five and ten feet below grade, respectively in 1985. In the former pump island area soil boring logs indicate a "strong petroleum odor" at depths of between eight and twelve

feet. However, PHII soil samples used for risk characterization purposes in 1998 were collected between one and seven feet.

Identified violations of MCP requirements include:

- a. Failure to achieve a level of No Significant Risk as groundwater contaminant concentrations exceed the applicable GW-1 standard,
- b. Failure to evaluate the horizontal and vertical extent of contamination in soil media,
- c. Failure to support the RAO by assessments of sufficient scope, detail and level of effort to characterize the risk of harm to health, safety, public welfare, and the environment.

The Department requested the preparation of an Audit Follow-up Plan to submit additional information in a revised PHII to support the RAO or retraction of the RAO.

(Easton, 4-00364, NON-SE-99-3A-067, November 10, 1999).

2. Following an audit of an Immediate Response Action (IRA) Completion Statement and subsequent Class A-2 RAO filed for a site located at a retail gasoline sales facility, the Department issued a NOAF which found that the audited actions comply with the requirements of the MCP, and no violations or deficiencies were identified.

The retail gasoline sales facility is comprised of a commercial building with four gasoline USTs and a dispenser island. The facility lies within a Non Potential Drinking Water Source Area. During a facility upgrade in 1997 (removal of USTs and dispensing system), the Department was notified of a release as established by measurement of greater than 100 parts-per-million (ppm) by volume of total organic vapors in the headspace of a soil sample collected at the bottom of the UST excavation. Upon notification, the Department approved the removal of up to 500 cubic yards of soil as an IRA. Approximately 340 cubic yards was removed. Confirmatory composite samples were collected from the base and sidewalls of the UST excavation. Laboratory analysis for Volatile Petroleum Hydrocarbon (VPH), and VPH target analytes as well as naphthalene and 4-methyl-2 pentanone indicated concentrations were not present in the soil samples in exceedance of GW-1/S-1 Standards. An assessment of potential groundwater impacts from the release condition was conducted through the installation of three groundwater-monitoring wells. Depth to groundwater was measured at fifty-three feet. Groundwater samples were analyzed for Extractable Petroleum Hydrocarbons (EPH), VPH, VPH target analytes, as well as naphthalene. Methyl tert-butyl ether (MTBE) was detected in two of the wells at concentrations below GW-1 standards. A combined IRA Completion Report and Class A-2 RAO Statement for the release were submitted to the Department in 1998.

(Plymouth, 4-13411, November 22, 1999).

3. Following a file review audit of a Release Abatement Measure (RAM) Completion Report and Method 1 risk characterization in Support of a Class A-2 RAO for a site located at a former industrial facility, the Department issued a NOAF/NON.

According to information presented in support of the Class A-2 RAO, the 4-acre site contained a lagoon. Process and cooling water, used during the manufacture of insulated wire, was detained in the lagoon. The objective of the RAM was to remediate soil at the base of and in the surficial soil surrounding the lagoon via excavation. The soil was impacted with oil and hazardous materials, including elevated concentrations of metals. Historic sampling also indicated that oil and/or hazardous materials, including elevated concentrations of metals were present in the lagoon water and groundwater at the site. Only the most recent round of groundwater analytical data (collected in 1991) was presented in the report. These data indicate that several metals were detected in groundwater. In particular, 60 micrograms per liter (ug/l) lead and 30 ug/l silver were detected in the groundwater sample collected from a monitoring well located downgradient of the lagoon. In addition 60 ug/l lead was also detected in the groundwater sample collected from a monitoring well adjacent to the lagoon. Lead and silver were not reported above the method detection limits in other groundwater samples collected from monitoring wells at the site during the 1991 sampling event.

The RAO Statement states "the contamination of concern at the Site is known to be present in soil only" and that, "the priority pollutant metals found in the site soil and groundwater are generally ubiquitous in the environment; in other words, these metals are found naturally in glacial outwash soils in varying concentrations". In addition, "the metals detected at the Site are primarily below DEP published background concentrations and are most likely naturally occurring." Concentrations of metals in soil prior to and following implementation of the RAM were evaluated in the Method 1 risk characterization; however, concentrations of metals in groundwater were not. In the NOAF/NON, the Department indicated that the decision to omit concentrations of metals in groundwater was not technically justified. The Department also indicated that the Background concentrations of lead and silver in groundwater per Department issued guidance are 8.8 ug/l and 4.7 ug/l, respectively. The Department determined that the RAO and supporting Method 1 Risk characterization does not adequately address risk posed by all constituents of concern present at the site.

Identified violations of MCP requirements include:

- a. failure to achieve a level of No Significant Risk (NSR) where a condition of NSR exists if no exposure point concentration is greater than the applicable MCP Method 1 soil or groundwater standard (concentrations of lead and silver detected in groundwater at the site exceed the applicable Method 1, GW-3 standards of 30 ug/l and 7 ug/l, respectively),
- b. failure to meet the Response Action Performance Standard (in certain groundwater samples, constituent concentrations were reported as "ND" or non-detect, however, the method detection limits, including those of lead and silver, are in excess of the applicable Method 1, GW-3 standards), and
- c. failure to clearly and accurately identify the boundaries of the disposal site or portion of the disposal site for which the RAO applies.

The Department requested additional response actions to demonstrate that a level of

NSR has been achieved or retraction of the RAO.

(Boston-Dorchester, 3-0152, NON-NE-99-3A-080, November 30, 1999).

November Consent Orders

1. The Department entered into an Administrative Consent Order with Penalty (ACOP) with Vining Disposal Services of Revere for violations of the Massachusetts Contingency Plan (MCP). Vining failed to notify DEP appropriately following two events where oil was released, one in Burlington and another at its facility in Peabody. A penalty of \$16,500 was assessed. (RTN 3-17696 & 3-17967, ACOP-NE-99-E002, November 1, 1999).
2. Holland Company of Adams pleaded guilty in North Adams District Court on criminal charges of failing to report a 1994 acid spill. A judge ordered the firm to pay a \$20,000 fine. The charges resulted from a lengthy investigation by the Environmental Strike Force.
3. The Department issued a Unilateral Administrative Order (UAO) to Northeast Caliper Corporation of Whitman for failing to remove contaminated soil from its property as it had agreed to do in a DEP-approved Immediate Response Action Plan. The company was fined \$1,000. (RTN 4-13998, UAO-SE-99-3P-001, November 19, 1999)
4. The Department entered into an ACOP with JEMS of New England of Worcester for violations of the MCP, including failure to conduct timely investigations, meet deadlines, and adhere to performance standards during assessment and cleanup of a former Texaco station in Clinton. JEMS agreed to accelerate cleanup of the site, and meet with DEP at least annually to discuss the status of all contaminated sites for which it is responsible. A penalty of \$15,000 was assessed. (RTN 2-00762, ACOP-CE-99-3007, November 30, 1999).

Audit Update - Notice of Audit

For those of you familiar with the Department's Audit process, since October 1993 a Notice of Audit was generally issued in a written format describing "the scope of the audit and the type of audit activities the Department initially intends to perform along with your responsibilities and relevant deadlines."

As a component of the audit, the Department was also charged with the provision of compliance assistance during the course of the audit to assist any person performing a response action to confirm, demonstrate or achieve compliance with the MCP. Oftentimes this compliance assistance resulted in the allowance for and correction of identified violations or deficiencies prior to the completion of the audit and development of a Notice of Audit Finding.

In the Department's ongoing effort to improve and standardize its audit program and in accordance with the [most recent regulation revision](#) (effective October 29, 1999), compliance assistance is no longer a function of the audit. Therefore, "new" or additional information provided during the course of the audit (including correction of identified violations or

deficiencies) will not be included in the Department's evaluation of a site's compliance status ("snap shot in time") as audited. As a result of this change, the Department intends to structure an audit in a way that assembles all the information and facts upfront prior to its evaluation.

Beginning in January 2000, when the Department issues a written Notice of Audit, it will also do the following:

- Provide a listing of the documents available in the Departments file for review and audit evaluation, and
- Provide a limited timeframe for parties to supplement this list with additional, existing documentation, which should be considered for the audit evaluation.

In addition to these items, the Department will continue to include a formal Request for Information and/or Request for Site Inspection. Any questions about a Notice of Audit and/or its requirements will continue to be addressed by regional audit staff.

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Updated: January 4, 2000



Audit and Enforcement Update December 1999

Audit Findings for December 1999:

DEP completed twenty-four (24) audits in December 1999. Seventeen (17) did not require further assessment/fieldwork. Seven (7) audits found response actions lacked sufficient assessment/fieldwork. Audit findings of particular significance in December include:

1. Following an audit of an Immediate Response Action (IRA) and Class A-1 Response Action Outcome (RAO) Statement filed for a release on the Massachusetts Turnpike, DEP issued a NOAF that found the audited actions comply with applicable requirements of the MCP, and no violations or deficiencies were identified. In August 1999, DEP received a 2-hour notification of a sudden release of approximately 35 gallons of diesel fuel from a tractor-trailer saddle tank to the asphalt roadway surface. IRA activities included fuel containment and use of absorbent material to remedy the release. The release was contained to the pavement area. Pavement was reported to be competent and free of cracks or other potential migration pathways. Catchbasins, adjacent soil, and surface water were not impacted. In October 1999, DEP received a Class A-1 RAO.

(Auburn, 2-12904, December 8, 1999).

2. Following an audit of an IRA, Phase I - Initial Site Investigation and Class A-2 RAO Statement, DEP issued a Notice of Audit Findings (NOAF)/Notice of Noncompliance (NON) that identified violations in the actions audited. The site is located at a gasoline sales and service station facility. Since 1943, portions of the facility were historically used as a gasoline sales and service facility.

In 1997, DEP received a 120-day release notification for the presence of benzene, toluene, methyl tert-butyl ether (MTBE), and total petroleum hydrocarbon (TPH) in groundwater above applicable reportable concentrations (RTN 4-12857).

In March 1997, DEP received a 72-hour release notification for the detection of more than one-half inch of petroleum product in a monitoring well (RTN 4-12917). Due to the fact that the two reported release conditions are likely of the

same origin, RTN 4-12857 was closed and RTN 4-12917 was assigned to the site.

In April 1997, a written IRA Plan to remove and recycle up to 1,700 cubic yards of petroleum-impacted soil was submitted as a source removal measure. The IRA Plan also proposed to pump and treat groundwater and assess soil/groundwater. Before IRA activities were initiated, groundwater sampling results from three of nineteen existing wells indicated Upper Concentration Limit exceedences of TPH and MTBE. Initially, IRA excavation activities removed 2,753 tons of soil. However, based on elevated soil analytical results, an IRA addendum plan was submitted to facilitate additional soil removal. A total of 4,110 tons of soil and 5,000 gallons of groundwater was removed and recycled as an IRA. Eight groundwater monitoring wells were destroyed during IRA excavation including the downgradient monitoring wells.

Post-excavation soil samples were collected and remaining groundwater monitoring wells were sampled in support of a Class A-2 RAO submitted in October 1999. Discussion concerning the historic exceedences of TPH and MTBE above the UCL for groundwater was not included in the RAO. Historic exceedences of Method 1 GW-2 and GW-3 standards in removed downgradient monitoring wells was not discussed. In addition, no information concerning the past potential on-site use of floor drains or septic systems was included. Although below the applicable Method 1 standards for the identified groundwater categories of GW-2 and GW-3, updated monitoring data collected from remaining monitoring wells during the audit (October 1999) indicates MTBE concentrations are continuing to rise.

Identified violations of MCP requirements include:

- a. failure to conduct IRA activities with approval,
- b. failure to define the extent of the disposal site and identify potential migration pathways, including the potential impact to indoor air at downgradient abutting residential properties, and
- c. failure to delineate the boundaries of the disposal site to which the RAO applies.

DEP requested additional characterization of the groundwater contamination at the site to delineate the extent of the release, and submittal of a site plan that delineates the boundaries of the disposal site for which the RAO applies.

(Fall River, 4-12917, NON-SE-99-3A-070, December 9, 1999).

3. Following an audit of a Class B-1 RAO and a related Class A-2 RAO for a site located at a retail gasoline facility, DEP issued a NOAF/NON. The RAO statements relate to a retail gasoline facility and an abutting shopping mall and commercial complex to the east, south, and west. The gasoline facility was first identified as a disposal site in 1986 when separate-phase petroleum was encountered on the shopping mall property to the west (RTN 4-0360). Tightness testing of underground storage tanks (USTs) at the gasoline facility revealed that

the UST submersible pump system in two of the tanks was not tight. The amount of gasoline released was not known. DEP granted a waiver of approvals in 1992.

Assessment activities completed at the site include installation of soil borings, monitoring wells, and collection and laboratory analysis of soil and groundwater samples from 1989 through 1995. The results of historical subsurface investigations indicate the site is underlain by bedrock at approximately 12 to 27 feet below grade. The horizontal flow of groundwater is estimated to be in a westerly direction. The vertical component of groundwater flow was not evaluated. Technical justification was used to forego the complete determination of the horizontal and vertical extent of the release. Technical justification was ". . . based upon the properties of the compounds identified, hydrogeological characteristics of the site, historical information provided for the site, and the levels detected in soil and groundwater at the site were below the Method 1 S-1 soil and GW-2 and GW-3 groundwater standards." Response actions included limited passive separate-phase recovery. A Class A-2 RAO including a Method 1 risk characterization was submitted in May 1995 indicating that a level of No Significant Risk had been achieved.

In August 1998, gasoline odors were identified in an irrigation well located approximately 30 feet southeast of the gasoline facility on the abutting commercial property. The odors were identified during drilling activities conducted to increase the well's yield. Groundwater samples collected from the well indicated the presence of petroleum compounds above the applicable GW-2 Reportable Concentration.

In October 1998, DEP received notification of the release condition (RTN 4-14428). In August, September, and October 1998, and January 1999, groundwater monitoring of the irrigation well was conducted. Results of the September, October, and January events were compared to Method 1 GW-2 standards. Information regarding the construction of the irrigation well, which is potentially installed in bedrock and the hydraulic connection to the retail gasoline facility, was not assessed. Based on this information, DEP received a Class B-1 RAO Statement and supporting documentation indicating that a level of NSR existed at the site.

Identified violations of MCP requirements of the Class B-1 RAO include:

- a. failure to delineate the boundaries of the disposal site for which the RAO applies,
- b. failure to demonstrate that the source of contamination has been either eliminated or controlled,
- c. failure to take response actions of sufficient scope, detail, and level of effort to characterize the risk of harm to health, safety, public welfare, and the environment posed by the site (a Method 3 risk characterization is necessary to characterize risk associated with an irrigation well),
- d. failure to collect the quantity and quality of information necessary to adequately demonstrate a level of NSR, and
- e. failure to conduct public involvement activities.

Identified violations of MCP requirements of the Class A-2 RAO include:

- a. failure to consider previously collected site data,
- b. failure to support the risk characterization by scientifically valid or defensible data, and
- c. failure to conduct response actions and investigative practices that are scientifically defensible, and of the level of precision and accuracy commensurate with the intended use (the technical justification used to forego assessing the extent of contamination was not defensible).

DEP requested additional existing information (if available) in support of each RAO Statement to demonstrate compliance with the MCP or retraction of both RAO Statements within 30 days.

(Franklin, 4-00360 and 4-14428, NON-SE-99-3A-057, December 22, 1999).

1999 Auditing Year in Review

DEP issued one hundred and sixty-nine (169) audits in 1999. One hundred (100) of those audits did not require further assessment/fieldwork. Sixty-nine (69) audits found response actions lacked sufficient assessment/fieldwork.

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